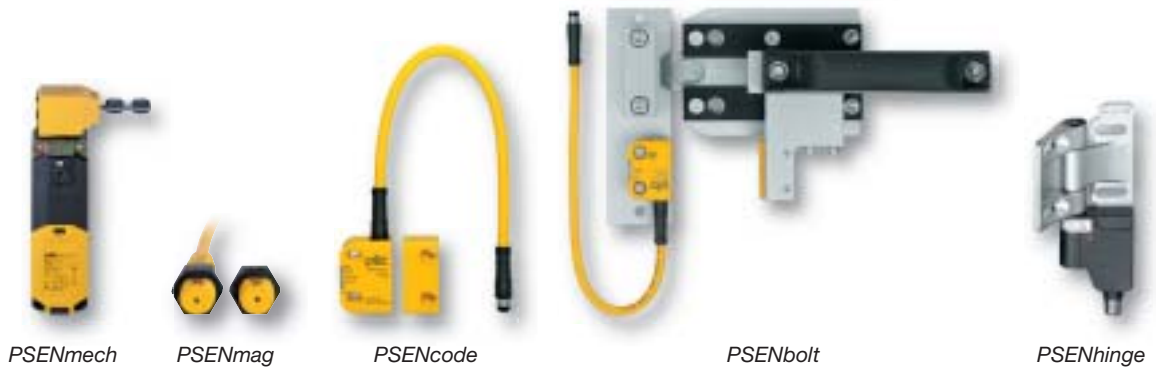




► Safety switches, safety bolts and safe hinge



... for safety gate and position monitoring

Pilz safety gate components are particularly economical in meeting the requirements of EN 1088. They are suitable for applications in mechanical engineering as well as in the packaging or pharmaceutical industry and many other sectors.

Safety switches – for safety gate and position monitoring at optimum cost

Safety switches are effective and optimized for cost. They are available with various designs and operating principles and can be used under difficult environmental conditions. Additional costs can be saved when connected in series.

Choose the optimum switch for your application:

- Mechanical – using increased extraction force on the actuator the PSENmech can prevent the safety gates from being opened unintentionally
- Non-contact, magnetic – the magnetic operation of the PSENmag is ideal for applications with the highest safety requirements
- Non-contact, coded – PSENcode offers the highest level of safety and manipulation protection with integrated evaluation in the smallest space possible



switches

Safety bolts – the robust, cost-effective solution for a rugged industrial environment

PSENbolt safety bolts are the ideal solution for safety gates that are difficult to adjust or are used in areas where safety gates are often opened and closed. What you get is a complete, economical package comprising safety switch, handle and bolt, for a rugged industrial environment.

Safe hinge switches – packaged hinge and safety switch

For hinged safeguards, safe hinge switches PSEnhinge are a safe complete solution, comprising hinge and safety switch. Designed as one functional and installation unit, they offer a high level of flexibility in installation, connection and adjustment.



Selection guide – Safety switches, safety bolts and safe hinge switches

Type	Safety switches PSENmech	Safety switches PSENmag	Safety switches PSENcode	Safety bolts PSENbolt	Hinge switches PSEnhinge
Operation	Mechanical	Non-contact, magnetic	Non-contact, coded	Mechanical	Mechanical
Application on guards					
Covers	◆	◆	◆	◆	
Flaps	◆	◆	◆	◆	◆
Hinged safety gates	◆	◆	◆	◆	◆
Sliding safety gates	◆	◆	◆	◆	
Rolling doors		◆	◆		
Position detection		◆	◆		
Manipulation protection	Normal	Normal	High	High ¹⁾	High
Guard locking	With/without	None	None	With ²⁾	None
IP protection type	Up to IP65/IP67	IP67/IP69K	IP67	³⁾	IP67
Harsh environmental conditions	Suitable	Very suitable	Very suitable	Very suitable	Very suitable

¹⁾ When using non-contact, coded safety switches PSENcode

²⁾ When using mechanical safety switches PSEN me1 with guard locking

³⁾ Depending on the safety switch that is used



► Selection guide – PSENmag

Non-contact magnetic safety switches PSENmag – Square design

Common features

- ▶ Safety switches for monitoring the position of movable guards in accordance with EN 60947-5-3
- ▶ Approved for applications up to Performance Level e of EN ISO 13849-1 and SIL CL 3 of IEC 62061 or up to Category 4 of EN 954-1 in conjunction with:
 - Safety relays PNOZsigma: PNOZ s3, PNOZ s4, PNOZ s5
 - Configurable safety systems PNOZmulti: All evaluation devices
 - Programmable control systems PSS, with or without SafetyBUS p interface: All evaluation devices
- ▶ Connected directly, via PDP67 or via the interface PSEN ix1, see accessories, page 66
- ▶ Protection type:
 - Cable versions: IP69K
 - Connector versions: IP67



PSEN ma1.4a



PSEN ma1.4p



PSEN 1.1p



Type	Assured switching distance
PSEN ma1.4a-50/PSEN ma1.4-10	10 mm
PSEN ma1.4a-51/PSEN ma1.4-10	10 mm
PSEN ma1.4a-52/PSEN ma1.4-10	10 mm
PSEN ma1.4p-50/PSEN ma1.4-10	10 mm
PSEN ma1.4p-51/PSEN ma1.4-10	10 mm
PSEN ma1.4p-52/PSEN ma1.4-10	10 mm
PSEN ma1.4n-50/PSEN ma1.4-10	10 mm
PSEN ma1.4n-51/PSEN ma1.4-10	10 mm
PSEN 1.1a-20/PSEN 1.1-20	8 mm
PSEN 1.1a-22/PSEN 1.1-20	8 mm
PSEN 2.1a-20/PSEN 2.1-20	8 mm
PSEN 2.1b-20/PSEN 2.1-20	8 mm
PSEN 1.1p-20/PSEN 1.1-20	8 mm
PSEN 1.1p-22/PSEN 1.1-20	8 mm
PSEN 2.1p-20/PSEN 2.1-20	8 mm
PSEN 2.1p-21/PSEN 2.1-20	8 mm
PSEN 1.1b-23/PSEN 1.1-20	8 mm
PSEN 1.1p-23/PSEN 1.1-20	8 mm
PSEN 1.1p-25/PSEN 1.1-20	8 mm
PSEN ma1.4a-50/PSEN ma1.4-03	3 mm
PSEN ma1.4a-51/PSEN ma1.4-03	3 mm
PSEN ma1.4a-52/PSEN ma1.4-03	3 mm
PSEN ma1.4p-50/PSEN ma1.4-03	3 mm
PSEN ma1.4p-51/PSEN ma1.4-03	3 mm
PSEN ma1.4p-52/PSEN ma1.4-03	3 mm
PSEN ma1.4n-50/PSEN ma1.4-03	3 mm
PSEN ma1.4n-51/PSEN ma1.4-03	3 mm
PSEN 1.1p-10/PSEN 1.1-10	3 mm
PSEN 1.1p-12/PSEN 1.1-10	3 mm

Contacts	Single connection	Series via	LED	ATEX	Connection type Cable/connector	Order number ¹⁾
	◆	-			5 m	506322
	◆	-	◆		5 m	506326
		PSEN ix1			5 m	506323
	◆	-			M8, 4-pin, pigtail, 25 cm	506334
	◆	-	◆		M8, 8-pin, pigtail, 25 cm	506338
		PSEN ix1			M8, 4-pin, pigtail, 25 cm	506335
	◆	PDP67			M12, 5-pin, pigtail, 25 cm	506342
	◆	PDP67	◆		M12, 5-pin, pigtail, 25 cm	506343
	◆	-			5 m	504226
		PSEN ix1			5 m	504228
	◆	-			5 m	502226
	◆	-			10 m	502227
	◆	-			M8, 4-pin	504220
		PSEN ix1			M8, 4-pin	504222
	◆	-			M8, 4-pin	502220
	◆	-	◆		M8, 4-pin	502221
	◆	-		◆	10 m	504250
	◆	-		◆	M8, 4-pin	504223
		PSEN ix1		◆	M8, 4-pin	504225
	◆	-			5 m	506320
	◆	-	◆		5 m	506324
		PSEN ix1			5 m	506321
	◆	-			M8, 4-pin, pigtail, 25 cm	506332
	◆	-	◆		M8, 8-pin, pigtail, 25 cm	506336
		PSEN ix1			M8, 4-pin, pigtail, 25 cm	506333
	◆	PDP67			M12, 5-pin, pigtail, 25 cm	506340
	◆	PDP67			M12, 5-pin, pigtail, 25 cm	506341
	◆	-			M8, 4-pin	504210
		PSEN ix1			M8, 4-pin	504212



¹⁾ Order number for safety switch and actuator (one unit)

★ Recommended type for the majority of applications



▶ Selection guide – PSENmag

Non-contact magnetic safety switches PSENmag – Round design

Common features

- ▶ Safety switches for monitoring the position of movable guards in accordance with EN 60947-5-3
- ▶ Approved for safe applications up to Performance Level e of EN ISO 13849-1 and SIL CL 3 of IEC 62061 or up to Category 4 of EN 954-1 in conjunction with:
 - Configurable safety systems PNOZmulti: All evaluation devices
 - Programmable control systems PSS/SafetyBUS p: All, in conjunction with standard function block SB066 for safety gate monitoring
- ▶ Connected directly, via PDP67 or via the interface PSEN ix1, see accessories, page 66
- ▶ Protection type:
 - Cable versions: IP69K
 - Connector versions: IP67



PSEN ma1.3



PSEN 1.2p



Type	Operating distance
▶ M12 housing	
PSEN ma1.3a-20/PSEN ma1.3-08	8 mm
PSEN ma1.3a-22/PSEN ma1.3-08	8 mm
PSEN ma1.3b-20/PSEN ma1.3-08	8 mm
PSEN ma1.3b-22/PSEN ma1.3-08	8 mm
PSEN ma1.3p-20/PSEN ma1.3-08	8 mm
PSEN ma1.3n-20/PSEN ma1.3-08	8 mm
PSEN ma1.3p-22/PSEN ma1.3-08	8 mm
PSEN ma1.3a-20/PSEN ma1.3-12	12 mm
PSEN ma1.3a-22/PSEN ma1.3-12	12 mm
PSEN ma1.3b-20/PSEN ma1.3-12	12 mm
PSEN ma1.3b-22/PSEN ma1.3-12	12 mm
PSEN ma1.3p-20/PSEN ma1.3-12	12 mm
PSEN ma1.3n-20/PSEN ma1.3-12	12 mm
PSEN ma1.3p-22/PSEN ma1.3-12	12 mm
PSEN ma1.3b-23/PSEN ma1.3-08	8 mm
PSEN ma1.3b-25/PSEN ma1.3-08	8 mm
PSEN ma1.3b-23/PSEN ma1.3-12	12 mm
PSEN ma1.3b-25/PSEN ma1.3-12	12 mm
▶ M30 housing	
PSEN 1.2p-20	8 mm
PSEN 1.2p-22	8 mm
PSEN 2.2p-20	8 mm
PSEN 2.2p-21	8 mm
PSEN 1.2p-23	8 mm
PSEN 1.2p-25	8 mm
PSEN 2.2p-24	8 mm

Contacts	Single connection	Series via	LED	ATEX	Connection type Cable/connector	Order number ¹⁾
Y Y Y	◆	-	◆		5 m	506220
Y Y Y		PSEN ix1	◆		5 m	506221
Y Y Y	◆	-	◆		10 m	506222
Y Y Y		PSEN ix1	◆		10 m	506223
Y Y Y	◆	-	◆		M8, 8-pin, pigtail, 25 cm	506226
Y Y Y	◆	PDP67	◆		M12, 5-pin, pigtail, 25 cm	506228
Y Y Y		PSEN ix1	◆		M8, 8-pin, pigtail, 25 cm	506227
Y Y Y	◆	-	◆		5 m	506230
Y Y Y		PSEN ix1	◆		5 m	506231
Y Y Y	◆	-	◆		10 m	506232
Y Y Y		PSEN ix1	◆		10 m	506233
Y Y Y	◆	-	◆		M8, 8-pin, pigtail, 25 cm	506236
Y Y Y	◆	PDP67	◆		M12, 5-pin, pigtail, 25 cm	506238
Y Y Y		PSEN ix1	◆		M8, 8-pin, pigtail, 25 cm	506237
Y Y Y	◆	-	◆	◆	10 m	506224
Y Y Y		PSEN ix1	◆	◆	10 m	506225
Y Y Y	◆	-	◆	◆	10 m	506234
Y Y Y		PSEN ix1	◆	◆	10 m	506235
Y Y	◆	-			M8, 4-pin	505220
Y Y		PSEN ix1			M8, 4-pin	505222
Y Y	◆	-			M8, 4-pin	503220
Y Y	◆	-	◆		M8, 4-pin	503221
Y Y	◆	-		◆	M8, 4-pin	505223
Y Y		PSEN ix1		◆	M8, 4-pin	505225
Y Y	◆	-	◆	◆	M8, 4-pin	503224

¹⁾ Order number for safety switch and actuator (one unit)

★ Recommended type for the majority of applications



Selection guide

PSENmag Part 1

Type Safety switch	Actuator	Assured operating/ release distance s_{ao}/s_{ar}	Switch type	Design	LED	Connection
PSEN 1.1p-10	PSEN 1.1-10	3 mm / 19 mm	2 N/O	Square	No	Connector
PSEN 1.1p-12	PSEN 1.1-10	3 mm / 19 mm	2 N/O	Square	No	Connector
PSEN 1.1a-20	PSEN 1.1-10	8 mm / 26 mm	2 N/O	Square	No	Cable, 5 m
PSEN 1.1b-20	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Cable, 10 m
PSEN 1.1p-20	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Connector
PSEN 1.1a-22	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Cable, 5 m
PSEN 1.1b-22	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Cable, 10 m
PSEN 1.1p-22	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Connector
PSEN 1.1b-23 ATEX	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Cable, 10 m
PSEN 1.1p-23 ATEX	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Connector
PSEN 1.1b-25	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Cable, 10 m
PSEN 1.1p-25	PSEN 1.1-20	8 mm / 26 mm	2 N/O	Square	No	Connector
PSEN 1.2p-20	PSEN 1.2-20	8 mm / 26 mm	2 N/O	Round	No	Connector
PSEN 1.2p-22	PSEN 1.2-20	8 mm / 26 mm	2 N/O	Round	No	Connector
PSEN 1.2p-23 ATEX	PSEN 1.2-20	8 mm / 26 mm	2 N/O	Round	No	Connector
PSEN 1.2p-25 ATEX	PSEN 1.2-20	8 mm / 26 mm	2 N/O	Round	No	Connector

Selection guide

PSENmag Part 1

Type Safety switch	Actuator	Evaluation device	Connection to evaluation device	Page
PSEN 1.1p-10	PSEN 1.1-10	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-28
PSEN 1.1p-12	PSEN 1.1-10	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-34
PSEN 1.1a-20	PSEN 1.1-10	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-2
PSEN 1.1b-20	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-2
PSEN 1.1p-20	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-40
PSEN 1.1a-22	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-8
PSEN 1.1b-22	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-8
PSEN 1.1p-22	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-46
PSEN 1.1b-23 ATEX	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-14
PSEN 1.1p-23 ATEX	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-52
PSEN 1.1b-25	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-21
PSEN 1.1p-25	PSEN 1.1-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-59
PSEN 1.2p-20	PSEN 1.2-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-66
PSEN 1.2p-22	PSEN 1.2-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-72
PSEN 1.2p-23 ATEX	PSEN 1.2-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Direct	2.2-78
PSEN 1.2p-25 ATEX	PSEN 1.2-20	PNOZ X, PNOZpower, PNOZsigma, PNOZ-multi, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-85

Selection guide

PSENmag Part 2

Type Safety switch	Actuator	Assured operating/ release distance s_{ao}/s_{ar}	Switch type	Design	LED	Connection
PSEN 2.1p-10	PSEN 2.1-10	3 mm / 19 mm	1 N/C / 1 N/O	Square	No	Connector
PSEN 2.1p-11	PSEN 2.1-10	3 mm / 19 mm	1 N/C / 1 N/O	Square	yes	Connector
PSEN 2.1a-20	PSEN 2.1-20	8 mm / 26 mm	1 N/C / 1 N/O	Square	No	Cable, 5 m
PSEN 2.1b-20	PSEN 2.1-20	8 mm / 26 mm	1 N/C / 1 N/O	Square	No	Cable, 10 m
PSEN 2.1p-20	PSEN 2.1-20	8 mm / 26 mm	1 N/C / 1 N/O	Square	No	Connector
PSEN 2.1p-21	PSEN 2.1-20	8 mm / 26 mm	1 N/C / 1 N/O	Square	yes	Connector
PSEN 2.1p-24 ATEX	PSEN 2.1-20	8 mm / 26 mm	1 N/C / 1 N/O	Square	yes	Connector
PSEN 2.1b-26 ATEX	PSEN 2.1-20	8 mm / 26 mm	1 N/C / 1 N/O	Square	yes	Cable, 10 m
PSEN 2.1p-30	PSEN 2.1-10	6 mm / 25 mm	1 N/C / 1 N/O	Square	No	Connector
PSEN 2.1p-31	PSEN 2.1-10	6 mm / 25 mm	1 N/C / 1 N/O	Square	yes	Connector
PSEN 2.1p-34 ATEX	PSEN 2.1-10	6 mm / 25 mm	1 N/C / 1 N/O	Square	yes	Connector
PSEN 2.2p-20	PSEN 2.2-20	8 mm / 26 mm	1 N/C / 1 N/O	Round	No	Connector
PSEN 2.2p-21	PSEN 2.2-20	8 mm / 26 mm	1 N/C / 1 N/O	Round	yes	Connector
PSEN 2.2p-24 ATEX	PSEN 2.2-20	8 mm / 26 mm	1 N/C / 1 N/O	Round	No	Connector
PSEN ma1.3a-20	PSEN ma1.3-08	8 mm / 15 mm	3 N/O	Round, M12	yes	Cable, 5 m
PSEN ma1.3b-20	PSEN ma1.3-08	8 mm / 15 mm	3 N/O	Round, M12	yes	Cable, 10 m
PSEN ma1.3a-22	PSEN ma1.3-08	8 mm / 15 mm	3 N/O	Round, M12	yes	Cable, 5 m
PSEN ma1.3b-22	PSEN ma1.3-08	8 mm / 15 mm	3 N/O	Round, M12	yes	Cable, 10 m
PSEN ma1.3b-23 ATEX	PSEN ma1.3-08	8 mm / 15 mm	3 N/O	Round, M12	yes	Cable, 10 m
PSEN ma1.3b-25 ATEX	PSEN ma1.3-08	8 mm / 15 mm	3 N/O	Round, M12	yes	Cable, 10 m

Selection guide

PSENmag Part 2

Type Safety switch	Actuator	Evaluation device	Connection to evaluation device	Page
PSEN 2.1p-10	PSEN 2.1-10	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-104
PSEN 2.1p-11	PSEN 2.1-10	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-110
PSEN 2.1a-20	PSEN 2.1-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-92
PSEN 2.1b-20	PSEN 2.1-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-92
PSEN 2.1p-20	PSEN 2.1-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-116
PSEN 2.1p-21	PSEN 2.1-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-122
PSEN 2.1p-24 ATEX	PSEN 2.1-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-128
PSEN 2.1b-26 ATEX	PSEN 2.1-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-98
PSEN 2.1p-30	PSEN 2.1-10	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-134
PSEN 2.1p-31	PSEN 2.1-10	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-140
PSEN 2.1p-34 ATEX	PSEN 2.1-10	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-146
PSEN 2.2p-20	PSEN 2.2-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-152
PSEN 2.2p-21	PSEN 2.2-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-158
PSEN 2.2p-24 ATEX	PSEN 2.2-20	PNOZelog, PNOZmulti, PSS with/without SafetyBUS P	Direct or via PSEN i1 interface	2.2-164
PSEN ma1.3a-20	PSEN ma1.3-08	PNOZ X, PNOZpower, PNOZsigma, PNOZmulti, PSS with/without SafetyBUS p	Direct	2.2-170
PSEN ma1.3b-20	PSEN ma1.3-08	PNOZ X, PNOZpower, PNOZsigma, PNOZmulti, PSS with/without SafetyBUS p	Direct	2.2-170
PSEN ma1.3a-22	PSEN ma1.3-08	PNOZ X, PNOZpower, PNOZsigma, PNOZmulti, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-177
PSEN ma1.3b-22	PSEN ma1.3-08	PNOZ X, PNOZpower, PNOZsigma, PNOZmulti, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-177
PSEN ma1.3b-23 ATEX	PSEN ma1.3-08	PNOZ X, PNOZpower, PNOZsigma, PNOZmulti, PSS with/without SafetyBUS p	Direct	2.2-184
PSEN ma1.3b-25 ATEX	PSEN ma1.3-08	PNOZ X, PNOZpower, PNOZsigma, PNOZmulti, PSS with/without SafetyBUS p	Via PSEN ix1 interface	2.2-191